

**ABSTRACT OF THE DISCLOSURE**

Apparatus for detecting a breath pattern of a breathing patient having lungs and a nose and mouth in communication with the lungs and breathing through the 5 nose and/or mouth and creating an airflow into and out of the lungs. The apparatus comprises a sensor in close proximity to the face of the patient for detecting said airflow to provide a first channel of airflow information in an analog format. An analog-to-digital 10 converter is provided for converting the first channel of airflow information in an analog format to a first channel of airflow information in a digital format. A filter is provided for filtering the airflow information in a digital format in the first channel of information 15 to improve the signal-to-noise ratio of the signal to provide filtered airflow information. An estimated volume airflow estimator operates on the filtered airflow information for estimating the amount of air volume inhaled and exhaled by the patient to provide a 20 signal representing the estimated volume of air. A wavelet transform feature extractor is provided for obtaining a continuous-time wavelet transform of the estimated volume of air for ascertaining whether a breathing pattern has been recognized and providing a 25 breathing pattern signal. A neural network pattern recognizer operates on the breathing pattern signal to ascertain when disordered breathing is occurring and provides a disordered breathing signal. A pattern

classifier operates on the disordered breathing signal to separate the disordered breathing into apnea and hypopnea categories.

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